

# **METHOD FOR INSERTING SOLID OBJECT INTO SKIN**

## **BACKGROUND OF THE INVENTION**

### 1. Field of the Invention

The present invention relates to a method, and more particularly to a method for injecting or inserting solid objects into or through skin of patients or users.

### 2. Description of the Prior Art

Typical subcutaneous or hypodermic injections are provided for injecting fluid medicines, with such as syringes, through or into skin of patients or users, or into muscles, blood vessels, etc., for allowing the fluid medicines to flow to the affected parts of the patients or users. The typical syringes may not be used for injecting or inserting solid objects into or through skin of patients or users.

Due to quickly circulation and absorption by patients or users, some of the medicines have been packaged within capsules and then inserted into or through the skin of patients or users. The skin of patients or users is normally required to be cut to form a slot therein, for inserting the solid capsules into or through the skin of patients or users.

Similarly, for inserting the other solid objects, such as pacer makers, into or through the skin of patients or users, it is also required to cut and to form a groove or a slot in the skin of patients or users, in order to engage or to insert the solid objects into or through the skin of patients or users.

After the solid objects have been engaged or inserted into or through the skin of patients or users, the skin is required to be sutured with sutures, in order to retain the solid objects within the

patients or users. It is thus difficult and inconvenient and time consuming to insert the solid objects into the patients or users.

The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional methods for  
5 inserting solid objects into patients or users.

### **SUMMARY OF THE INVENTION**

The primary objective of the present invention is to provide a method for injecting or inserting solid objects into or through skin of patients or users without cutting the patients or users.

10 In accordance with one aspect of the invention, there is provided a method for inserting solid objects into human bodies, the method comprising providing a syringe having a bore and a front opening formed therein, to receive the solid objects therein, engaging the syringe into the human bodies, and disengaging the  
15 syringe from the human bodies, to retain the solid objects within the human bodies.

It is preferable that an extension is extended from the solid objects, and/or bent relative to the solid objects, to retain the solid objects within the human bodies while or after the syringe is  
20 disengaged from the human bodies.

The solid objects may include a capsule, and a material, such as a fluid or powder medicine received within the capsule, to allow the fluid or powder medicine to be engaged into the human bodies by the help of the capsule.

25 A plunger may further be provided and engaged into the syringe, to help engage the solid objects into the human bodies.

Further objectives and advantages of the present invention will

become apparent from a careful reading of the detailed description provided hereinbelow, with appropriate reference to the accompanying drawings.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

5        FIG. 1 is a plan schematic view illustrating a method in accordance with the present invention for injecting or inserting solid objects into or through skin of patients or users without cutting the patients or users; and

      FIGS. 2, 3, 4, 5, 6 are plan schematic views similar to FIG. 1,  
10     illustrating a method in accordance with the present invention for injecting or inserting various kinds of solid objects into or through skin of patients or users;

      FIG. 7 is an enlarged partial perspective view illustrating a solid object to be injected or inserted into the patients or users; and

15        FIGS. 8 and 9 are plan schematic views similar to FIGS. 1-6, illustrating the method for injecting or inserting the solid objects as shown in FIG. 7 into or through skin of patients or users.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

      Referring to the drawings, and initially to FIG. 1, a method in  
20     accordance with the present invention is provided for injecting or inserting solid objects 30 into or through skin of patients or users, such as for injecting or inserting the solid objects 30 through the stratum corneum 70 and into the stratum spinosum or the stratum granulosum 71 of the epidermis of the patients or users, or into the  
25     dermis 72 of the patients or users.

      As best shown in FIGS. 1-3, it is preferable that some of the solid objects 30 are preferably injected or inserted into the portions

or areas or lines where the acupuncture points 73 are located and where acupuncture needles (not shown) are normally engaged into the human bodies.

The solid objects 30 may be selected from long acting slow releasing solid drugs, slow releasing tablets, pace makers, threads in subcutaneous caves, contrast media, etc., capsules for receiving fluid or powder medicines, etc., or slow releasing agents, such as a polymer of nitroglycerin and catgut, a polymer of conjugated estradiol and vicryl, a polymer of metildigoxin and dextran, etc., or goat intestines for engaging into the portions or areas or lines where the acupuncture points 73 are located.

A syringe 10 includes a bore 11 formed therein and a front opening 12 formed therein and communicating with the bore 11 thereof for receiving the solid objects 30 to be injected or inserted or engaged into the human bodies. A plunger 20 is slidably engaged in the bore 11 of the syringe 10, and includes a piston 21 for helping or facilitating the injection or engagement of the solid objects 30 into the human bodies.

The syringe 10 may be made of various kinds of materials that will not be rejected or excluded by the skin of the human bodies, such as porcelain materials, metal materials, composite materials, plastic materials, and polymers including glyceric acid, lactic acid, etc.

As shown in FIGS. 1-3, the solid objects 30 may comprise a solid object body or member 31 that may be engaged into the bore 11 of the syringe 10 via the front opening 12 of the syringe 10, and/or may comprise an extension 32 extended and bent from the

solid object member 31 and preferably bent and located outside the syringe 10.

In operation, the solid objects 30 may be injected or inserted or engaged into the human bodies by injecting or inserting or engaging  
5 the plunger 20 into the human bodies, such as engaged through the stratum corneum 70, and into the stratum spinosum or the stratum granulosum 71 of the epidermis, or into the dermis 72 of the patients or users, and/or into the portions where the acupuncture points 73 are located. It is preferable that the syringe 10 includes a length  
10 greater than 50 $\mu$ m, for allowing the syringe 10 to be engaged at least through the stratum corneum 70 of the patients or users.

When the plunger 20 is pulled out of the human bodies, as shown in FIG. 3, the bent extension 32 of the solid object 30 may engage with the human bodies, and thus may retain and maintain the  
15 solid object 30 within the human bodies. The solid objects 30 which have the bent extension 32 extended therefrom may thus be engaged into the human bodies without the plunger 20.

As shown in FIGS. 4 and 5, the solid objects 30 which have no bent extensions extended therefrom may also be engaged into the  
20 bore 11 of the syringe 10 via the front opening 12 of the syringe 10, and may be injected or engaged into the human bodies by moving or forcing the plunger 20 along the bore 11 of the syringe 10.

Referring next to FIGS. 6-9, the solid objects 30 may include a outer film or capsule, such as a gelatine capsule 33 that may be  
25 resolved and absorbed by human bodies, and that may be engaged into the bore 11 of the syringe 10 via the front opening 12 of the syringe 10, and that may include a fluid material or medicine or

other material 34 received within the capsule 33, such as the normal saline solution, silica gel, or other fluid or powder medicines, best shown in FIG. 7.

In operation, the capsule 33 of the solid object 30 is engaged  
5 into the bore 11 of the syringe 10 via the front opening 12 of the syringe 10, and the plunger 20 may move the capsule 33 of the solid object 30 toward the front opening 12 of the syringe 10, in order to retain the solid object 30 within the bore 11 of the syringe 10 and located close to the front opening 12 of the syringe 10, best shown  
10 in FIG. 6.

When either of the polymers of the slow releasing agents is selected and injected into the skin of the users, the slow releasing agents may be gradually released into the bodies of the users. For example, the polymer of nitroglycerin and catgut may be gradually  
15 released into the bodies of the users for more than three (3) weeks, the polymer of conjugated estradiol and vicryl may be gradually released into the bodies of the users for up to one month, and the polymer of metildigoxin and dextran may be gradually released into the bodies of the users for more than one month. The pace makers  
20 are normally required to be changed or replaced with the new ones every half a year, or every year.

The capsule 33 of the solid object 30 may then be easily injected or engaged into the human bodies by injecting or engaging the syringe 10 into the human bodies (FIG. 8), and may be retained  
25 within the human bodies by pulling the syringe 10 out of the human bodies, and by maintaining the plunger 20 in position relative to the human bodies, i.e., by moving the syringe 10 relative to the plunger

20, to allow the solid object 30 to be retained and maintained within the human bodies, FIG. 9.

The medicine 34 may thus be injected or engaged into the human bodies without cutting the patients or users, and the medicine  
5 34 received within the capsule 33 may thus be slowly released into the human bodies, in order to prolong the effectiveness of the medicine 34 to the human bodies.

Accordingly, the method of the present invention may be provided for injecting or inserting solid objects into or through skin  
10 of patients or users without cutting the patients or users.

Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination  
15 and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.